HOW TO USE TECHNOLOGY TO REDUCE WAREHOUSE COSTS



OCOLOT-





| 3 | WHY WAREHOUSING COSTS ARE GOING UP AND WHAT YOU CAN DO ABOUT IT |
|----|---|
| 16 | HOW TO USE TECHNOLOGY TO REDUCE WAREHOUSE COSTS |
| 26 | HERE ARE SOME WAYS YOU CAN USE OTHER CUTTING EDGE Technologies to eliminate errors |
| 35 | HOW TO INCREASE PRODUCTIVITY |
| 49 | THE DANGER OF WORKAROUNDS: HOW WORKAROUNDS ARE Costing Your Company Money |
| 57 | DOES THE SOFTWARE YOU ARE CURRENTLY USING FIT YOUR BUSINESS As it is right now? |
| 61 | PROTECT YOUR IT INFRASTRUCTURE |
| 65 | IS YOUR WAREHOUSE READY FOR THE TRANSITION TO SUPPLY CHAIN 4.0, THE DIGITAL SUPPLY CHAIN? |
| 68 | CONCLUSION |
| 69 | OUTER THE COMPANIES MENTIONED IN THIS GUIDE |

why warehousing costs are going up and what you can do about it

01

NO, IT IS NOT YOUR IMAGINATION.

Warehousing costs have been increasing. The explosive popularity of e-commerce, online shopping and the headaches of dealing with consumer expectations for fast fulfillment are only part of the story behind increasing costs. Uncertainty is another essential part of the story. U.S. trade disputes and threats of the imposition of tariffs on various countries have resulted in high levels of tension and uncertainty across supply chains around the world. At times both manufacturers and retailers hustled to forward-ship goods to beat tariff deadlines. Inventory levels have often been at unusually high levels during these periods with warehouses at record-setting capacity. American trade disputes for the past two years or so have caused companies to shuffle their arrangements, plan new strategies and become creative when they ran out of warehouse storage space. The dynamics of uncertainty added cost and

frequently, complexity to position inventory so that last mile delivery needs could be met.

With e-commerce, of course, comes the dilemma of shorter lead times for last mile delivery and other transportation and logistics challenges. The shortage of truck drivers, capacity crunches, natural disasters and geopolitical events pushed the cost of diesel fuel up and down throughout 2018. Overall, the year ended with the average price of diesel higher than the previous year.

Retailers including Target and Home Depot have <u>identified higher than anticipated</u> <u>supply chain costs</u>. Cost increases have been fueled by investments in digital fulfillment, modernization of delivery and instore pick up operations as well the cost of receiving and processing goods.

why are warehousing costs increasing?

Several factors have combined to create the conditions for rising warehouse costs. The incredible volume and increasing demand for fast low-cost delivery of online orders paired with high warehouse occupancy rates, labor shortages and the uncertainty of tariffs are the major culprits. Keeping up with accelerating costs, 3PL and warehouse operators increased their pricing across the board, including storage fees as well as for value-added services. In 2019, American third party logistics companies have reported that they have been quoting **10-20%** rate increases for standard warehousing activities including receiving, warehouse storage, delivery, returns processing and other basics.

In 2019, American 3PLs

%

rate increases for standard warehousing activities including recieving, warehouse storage, delivery, returns processing, and other basics.

According to 600 warehouses surveyed by Warehousing and Fulfillment.com, average management salaries for warehouse staff increased from \$47.5k in 2017 to \$50.5k, in 2018-2019 and for hourly workers from \$11.44 in 2017 to \$13.32 in 2018-2019. Cost per square foot increased from \$6.53 in 2017 to \$7.79 in 2018-2019. Corporate profits declined from 8.83% in 2017 to 7.25% in 2018-2019.





 $\mathbf{600}$

WAREHOUSES



workers

"...separation rates for the category of transportation, warehousing and utilities has been consistently increasing for the past 5 years from **38% in 2014 to over 44% in 2018**"

The cost of warehouse labor is typically **40-60%** of total warehouse operations costs. Across the country, states have increased or proposed to increase the minimum wage, increasing wages for all low skilled labor. For example, in California, the minimum wage will increase from \$10 per hour in 2017 to \$15 per hour in 2023, nearly a 7 percent annual increase.

The warehousing employment cost index is increasing rapidly, at a rate not seen since the recovery period following the Great Recession. This is due to increases in the minimum wage increases and the rampant shortage of warehouse workers.

Due to the popularity of new technologies, warehouses are now in need of more technically skilled workers. According to the 2018 McKinsey Global Institute (MGI) report, <u>the need for technology</u> <u>skills will escalate</u> by **55%.** Automation creates a different type of job growth, often leading to higher compensation for technical skills. Throughout the United States, there is a shortage of supply chain labor along with substantial turnover. According to the Bureau of Labor Statistics, separation rates for the category of transportation, warehousing and utilities has been consistently increasing for the past 5 years from 38% in 2014 to over 44% in 2018.

warehouse labor

"...cost to replace each warehouse worker can reach **25% of annual salary**, \$7,000 per worker"

E-commerce fulfillment continues to grow rapidly and is on pace to increase at a rate of 40 percent in e-commerce sales over the next five years. Solving this dilemma is problematic. Generally speaking, warehouses are facing a high demand for warehouse workers, low availability of labor and high worker turnover rates.

According to the Bureau of Labor Statistics and Salary.

com, warehouse workers have an average annual salary of \$28,000 but the cost to replace each warehouse worker can reach 25% of annual salary, \$7,000 per worker.

Because e-commerce orders tend to have greater variability in picking types and order profiles, the unstructured, variable nature of the operation does not lend itself to a "lights out" warehouse facility. Warehouse automation can be helpful in helping to fulfill a higher number of packages by fewer warehouse workers but in this context, cannot replace the warehouse workers. Automation and material handling solutions can aid operations in meeting changing business requirements and enhance labor productivity, but a human warehouse workforce will still be needed for the foreseeable future.



warehouse labor

real estate

According to industrial real estate experts including CBRE, <u>warehouse vacancy rates are close to</u>. <u>historically low levels</u>, 4%. Warehouse demand has continued to exceed the supply for the last 32 of 33 quarters. Also rising with warehouse occupancy rates are warehouse rental rates, an average of 5-6% annually, double that of commercial rate increases of **2-3%** per year. Warehouses today tend to have a more significant need for pick profile flexibility as compared to full pallet orders from big box retailers. This is driven by larger numbers of smaller-sized e-commerce orders.

In addition to large warehouse facilities near major urban areas, additional warehouse locations and/ or overflow spaces are also <u>highly in demand</u> to help service the need for immediate order fulfillment for e-commerce business.





"Trying to get ahead of new tariffs, ports and warehouses have reported **record capacity**."



tariffs

The issue of planning and executing supply chain operations in the era of unforeseen tariff imposition has introduced high levels of uncertainty and complexity into an already complicated equation. Trying to get ahead of new tariffs, ports and warehouses have reported record capacity. Ongoing trade disputes have resulted in the reshuffling of supply chains, often increasing logistics costs when contracted warehouse space was depleted and higher cost space had to be arranged.

warehousing, fulfillment & distribution costs

Shorter lead times and the associated repositioning of inventory needed for D2C order fulfillment has proven to be costly. Lack of process and procurement discipline, inadequate investment in the technologies that can enhance logistics and warehousing efficiencies can result in major impact to the bottom line.



today's warehouse operations rely on technology

As consumers continue to navigate away from brick and mortar stores towards more online purchases, warehouse and 3PL operators need to be ready to handle increasingly higher volumes of individual orders rather than palletized goods. Distribution and supply chain networks and strategies have changed along with operational strategies in order to meet the goal of getting orders in the hands of consumers faster. Along with the pressure of speed is the stress of keeping costs down.

TO ACCOMPLISH THIS, TECHNOLOGY IS NEEDED.

It is simply a fact of daily life that <u>3PLs and</u> warehouse operators that invest in technology, from systems that manage warehouse operations, financial, accounting operations and shipping to automation, tend to be more competitive and profitable than those who view technology as unnecessary or as a burden. Shippers often rely on their 3PLs for their information technology needs and expect that third party logistics providers are investing in the needed technologies to ensure the best performance and cost savings in warehouse operations. Investing in technology provides 3PLs with invaluable competitive advantages.



Take, for example, the **"brain"** of the warehouse operation, the WMS. <u>Warehouse management software</u>

runs the entire operation from receipt, putaway, order processing and fulfillment to shipping. Without having a WMS that relies on real time data capture, a warehouse operator loses the ability to have actionable intelligence about its operation. Without access to real time data and business intelligence that can provide vital insight into the business, costs can quickly spiral out of control.

..."brain" of the warehouse operation, the WMS Many warehouses are still using legacy warehouse management software that was developed over ten years ago. The technological foundation on which these systems were built usually does not have the capability of servicing e-commerce fulfillment clients that ship direct-to-consumer. Older WMS were developed to handle goods by the pallet or case, rather than individual items. In years gone by, warehouses could rely on their warehouse management system to handle orders for a retailer, say 100 orders with 20,000 pieces each, as compared with today's fast-paced order volume from online shopping, 20,000 orders with one piece in each order.

"...20,000 orders with one piece in each order"

Today, warehouses are often tasked with processing high volumes of direct-to-consumer (D2C) orders, instead of handling retail store replenishments: **different technology for a very different time**.

Older WMS often find the faster pace of operations, required speed, fluctuations in order demand and need for increased throughput to be problematic.



"...legacy warehouse management software may be cheaper to purchase today but **much more costly** in the long run when compared to today's cutting-edge workflowdriven WMS"



Legacy systems may be more costly and time consuming to upgrade and lack functionality valued by warehouse operators today. It also can be challenging to integrate legacy systems with newer technology and the older software may lack the capability of facilitating truly efficient processes. Wasting a few minutes here and there by not seem to be significant but those moments really add up to big dollars over time.

Hard-coded, costly and time-consuming to alter, legacy warehouse management software may be cheaper to purchase today but much more costly in the long run when compared to today's cutting-edge workflow-driven WMS. Today, 3PLs and warehouse operators need to be able to make changes swiftly and cost-effectively. **FLEXIBILITY IS KEY.**

Numerous warehouse management systems were originally developed for distributors but have been marketed for use by 3PLs for years. This is problematic as the software was not developed in a way that accommodates the "many to many" relationship of many inventory owners. Simply upgrading the software, maintaining it with patches, etc. is not effective, resulting in more added cost, downtime and diminished functionality.

02 how to use technology to reduce Warehouse COStS

Incorporating technology has been proven to **increase the speed**, **productivity and accuracy** of warehouse operations. Use of technology can facilitate the sharing of information across an enterprise and enable the data to be analyzed and used to determine ways to **reduce warehousing costs**.

how to optimize operational efficiency

take advantage of automated data collection

Whether you opt for 1D or 2D barcodes or use RFID, utilizing automated data collection methods enables faster, more accurate collection of data electronically. As we move towards a digital supply chain, ADC will become necessary to transform the collection of paper-based data into electronic information that can be used digitally. "...implementing advanced shipping notifications can result in a reduction of receiving costs of up to **40 percent**"

institute use of advanced shipping notifications (ASNs)

COSCO

FREDER

Using ASNs enables warehouses to pre-plan labor needs with greater certainty and be prepared for incoming shipments. This can help streamline order fulfillment and transportation activities to help ensure that service time requirements are met, transportation modes are optimized, and dwell times reduced, preventing added fees and penalties. ASNs are transmitted in an electronic format, either an EDI document or a web form.

According to Supply Chain Digest, implementing advanced shipping notifications can result in a reduction of receiving costs of up to 40 percent. Using ASNs helps to increase data accuracy for orders, provide real time visibility and can aid in the implementation of business initiatives including Just-in-Time Inventory (JIT). In addition, use of advanced shipping notifications facilitates crossdocking, dropshipping and direct store delivery.

rely on a WMS that provides a comprehensive audit trail

Having an audit trail will enable your business to have real time data available for such issues as validating 3PL billing charges for customers, track and trace, especially in the instance of product recalls; ensuring that quality control processes were performed as required and providing insightful data on workforce productivity.

氯化

風化

drones.... drones... drones....

Perform ongoing inventory cycle counts using drones. Rather than conducting periodic full inventory audits, introducing the practice of biweekly or weekly cycle counts aids in ensuring higher levels of inventory accuracy. Especially important for faster-moving SKUs, this cycle counting practice can prevent stock outs and help ensure customer satisfaction.

Using drones can be especially effective in capturing hardto-reach barcodes on inventory stored at high levels in the warehouse as scanner-carrying drones are able to navigate open warehouse shelving areas with ease and saving time needed to perch on ladders or use forklifts. Drones can also be used to read RFID tags, locating them through cameras from a distance of 10m. Caution should be exercised when using multiple drones in tight spaces, however. Consider using autonomous drones such as those from:







use <u>dock door appointment</u> <u>scheduling</u> to schedule simultaneous incoming shipments

Scheduling multiple arrivals of inbound trucks for offload helps maximize the use of the docks, consolidates labor resources and prevents separate set up and breakdown.



try Near Field Communications (NFC):

Using similar principles as RFID, **near field**. **communications** enable the automatic capture and reading of an inventory or asset tag. NFC is a shortrange wireless connectivity standard which uses magnetic field industry to facilitate communication between devices when they are close to or touching each other.

APRU

MAXEW TARE MAXEW CULCAP

AP

Bluetooth-enabled inventory and asset tracking tags facilitate the seamless flow of information

Using Bluetooth tag systems or <u>Bluetooth Low Energy (BLE) Beacons</u> function similarly to barcode systems but do not need to read a sticker. It is not necessary to have a clear line-of-sight between the Bluetooth scanner and the tag because the tag and associated information are read by a wireless reader. Because Bluetooth radio signals can transmit data through most materials, tags can be placed within packaged or palletized goods, making it easier for operations in which rough handling is likely to occur.

HOW DOES IT WORK? Bluetooth beacon tracking systems include three primary components:

A compact Bluetooth beacon, commonly referred to as BLE beacons or tags. A mobile scanner that can be used to read Bluetooth beacon signals. A smartphone or sensor could be used. An access point to a network. This is connected to a database or cloudbased server, possibly a smartphone.

Mobile scanners and access points in place ensure that warehouse workers do not need to scan labels or log into workstations or remote terminals.



🛝 ZEBRA

Zebra TC8300 Touch Computer Zebra MC3300 Mobile Computer Zebra Omnii XT15 Mobile Computer

2:44



focus on reducing errors

Errors zap productivity. According to supply chain technology experts, using warehouse management software to automate and optimize operational processes can result in nearly 99% inventory accuracy.



03

here are some ways you can use other cuttingedge technologies to eliminate errors:

use Electronic Data Interchange (EDI):

Transmit order information directly into your WMS database and eliminate manual data entry and data errors. As a bonus, using EDI enables your workforce to have the time to prepare for outgoing orders, giving them time to verify order accuracy.

activity-based billing:

Use automated data collection with a workflow-driven WMS to capture and bill for all the value-added services your 3PL warehouse provides-automatically. How does it work? Simple. New customers are set up for billing by the warehouse management software and the billing parameters are established per the signed contract. As work is performed, warehouse workers scan the license plates and use the mobile version of the WMS to select the operation for the value-added service to be billed, such as kitting, labeling, etc. The WMS automatically records the work and bills for the services, eliminating manual tracking and paper-based recordkeeping. Using a <u>3PL billing module</u> can make sure that your third party logistics business collects fees owed for all the value-added services your

| Datex FootPrint Desktop | | | | | | | | |
|---|--|--|-------------------------------|--------------------|----------|--------|----------------------|--|
| File View Options Tools Help | | | | | | | | |
| ootPrint Explorer | 4 3PL Management | | | | | | | |
| 3PL Management | Billing Contracts List X Contract 3625 X | | | | | | | |
| Invoices | New 🕅 Edit 🖬 Save 🖏 Copy Activate Deactivate | | | | | | | |
| Create Invoice | | | copy mentice occurrence | | | | | |
| Create CreditMemo | Contract ID | 3625 | | Notes | | | | |
| View Invoices | Name | BillingCont | tract 3625 | | | | | |
| Billing Codes | 0 | | | | | | | |
| Create Billing Code | Owner | JS Group | 0 - | | | | | |
| View Billing Codes | Project | Store A | 0 - | | | | | |
| Contracts | Account | | 0 - | | | | | |
| Create Contract | | | <u>~~</u> | | | | | |
| View Contracts | Effective Start (>=) | 03/0 Billin | ig Strategy Wizard - Accessoi | rial Charges | | | | |
| Billing Operations | a sea a sea | Bi | Iling Strategy Query | | | | | |
| View Billing Records | Auto Renewal Type | Auto Renewal Type You may select a query and customize the filtering conditions to refine your billing strategy. | | | | | | |
| Billing Forecast | Status | Crea | 94 - 12 - 53 ⁻¹ | 2247 | | | | |
| Projection Window | Currency | Unit | AC to Carrier | | * | | | |
| View Events | | Que | AC to carrier | | | | | |
| Accessorial Charges Templates | Tax Schedules | Defa : • | New Condition 🗙 Delete | Condition (😑 Group | | | | |
| Create Accessorial Charges Template | | | | | Ťa lo | Í.v. | 12 22 | |
| View Accessorial Charges Templates | Add New Contract L | And | i/Or | Field Name | Operator | Value | Description | |
| | Contract Items Attach | ments (* | And | createdDate | Equals | @today | | |
| | - Accessorial Charges | * (1 item) * | | | | | | |
| | Line Number S | Summary | | | | | | |
| L. | 2 | Accesso | | | | | | |
| Reports | Inbound Handling b | y Weight | | | | | | |
| - | Line Number S | Summary | | | | | | |
| Settings | 1 | ApplyDi | | | | | | |
| | | | | | | | | |
| Warehouse Management | | | | | | | | |
| | | | | | | | | |
| Material Management | | | | | | | | |
| | | | | | | | | |
| SPL Management | | | | | | | | |
| | | | | | | | | |
| Taid Management | | | | | | | | |
| Procurement Management | | | | | | | | |
| Procurement Management | | | | | | | | |
| 32 Labor Management | | | | | | | | |
| abor Management | | | | | | 5 | | |
| 2 Operations Management | | | | | | Cancel | Line << Back Next >> | |
| Coperations management | | 4 | | | | | | |
| Manufacturing | | | | | | | | |
| 21/ | | | | | | | | |
| Shinning Management | | | | | | | | |

track order accuracy rates:

Use the data from your warehouse management software to track issues such as returns, inventory details, etc. Errors indicate problems with processes, people or training that need to be addressed.



reduce process variation:

Standardize operational processes and automate with the workflow in a WMS. Using a workflowdriven system would enable your company to specify the flow of operational processes and incorporate business logic and decision making to customize processes as needed, including for multiple customers of a 3PL. Workflow-based software automates the processes, eliminating the need for warehouse workers to determine the next action of a process. This helps to ensure that each step of the process is executed correctly.





keep an eye on labor resources:

By using a labor management system or WMS, you should be able to identify errors and monitor problems related to specific warehouse workers. Measuring and tracking labor resources is critical to identifying those who need correction, additional training, reassignment or other action.

automate as much as possible:

The cost of material handling and other technologies has decreased and become much easier to justify, especially given the shift to the higher volume of individual D2C orders.

use the pack verification feature in your WMS:

Using this feature enables warehouse workers to quickly view an image of each item in the box on the user interface of the warehouse management system, eliminating the need to compare product names and identifiers. The brief <u>pack verification</u> check helps to catch and correct any errors before shipping.



Dimension

use a dimensioner to automatically capture package dimensions for shipping:

As industry leaders <u>FedEx and UPS have incorporated dimensional weight shipping</u> into their pricing models, take the error out of the process by using a dimensioner.

Using a dimensioner device such as <u>Rice Lake's iDimension®</u> or <u>Cubiscan</u> enables the capture of an image of packages, flats, poly bags, tubes and irregularlyshaped goods rapidly to help you calculate the dimensions when shipping. Using a dimensioner eliminates the guesswork and errors and can result in savings on shipping.



bow to increase productivity

Make sure your workforce has durable equipment, including handheld mobile computers and printers: selecting durable, rugged mobile handheld computers, tablets, scanner, imagers and thermal printers pays off in the long run. <u>Rugged devices</u> provide better data and network security, device management and data capture functionality and are built to withstand heavy use as well as the rigors of harsh conditions including temperature, shock, distance, drop and tumble and vibration. Keeping devices in the hands of your workforce makes sure that they are ready and able to tackle any challenge that comes their way, keeping your operation humming along.

initiate multi-task interleaving:

This popular strategy saves time and labor as warehouse workers eliminate deadheading. The WMS assigns tasks to labor resources to make use of each trip that the worker and equipment make during work shifts. This works in operations in which workers are enabled to have permission to pick and put goods away.
monitor and maintain systems and equipment:

Having even one forklift out of service can pose a threat to your ability to get orders out on time. Vendors are now offering <u>IoT-connected sensors</u> for use in distribution centers, warehouses and fulfillment centers. Data is transmitted by the sensors to the cloud via solutions including lift truck telematics, autonomous mobile robots (AMRs) and forklifts. These "smart" devices

uptime of assets. The data from these devices is used to drive predictive analytics, enabling managers to plan maintenance schedules and understand the health of critical assets. Using wireless sensors, such as those by Monnit, 3PLs and warehouse operators can maintain proper lighting and temperature, guard inventory against water damage and eliminate the need for manual checks. Wireless sensors can be set up to notify warehouse managers about suspicious work activity and potential unauthorized access of facilities.

monitor the health and





ensure maximum uptime for your mobile devices:

Mobile device management

enables IT resources to remotely access your company's mobile devices to prevent security breaches, troubleshoot problems, upgrade software and much moreall while keeping the device in the field where it is needed. With the cost of labor one of the highest in warehouse operations, ensuring that labor resources have mobile devices so that they can keep on working is paramount. Downtime costs are a productivity killer. Pictured: Zebra Technologies Mobile Printer and Scanner Mr. ZEBRA

maximize your workforce by using digital online training:

Between the use of seasonal workers and the high rate of turnover in the warehouse, 3PL and warehouse operators are frequently challenged to amplify workforce capabilities, even while saddled with a team that lacks the needed focus, experience and training. To help solve this problem, try to make the most of online training offered by vendors and suppliers. Some systems such as TMS and WMS offer 24/7 training using web portals, including videos, how-to instruction, guides, webinars and other methodologies.

reduce the incidence of lost or misplaced inventory using RFID:

<u>Here is how it works</u>. Position RFID portals at the ends of aisles. As pallets with RFID tags are moved by forklifts into aisles, data is captured and transmitted into a warehouse management system. This enables warehouse workers to be able to track the aisle in which each pallet is placed, eliminating wasted time searching for palletized goods.

READ OUR **RFID** CASE STUDY HERE



hands-free order selection.

85%

of end users were motivated to purchase warehouse wearable devices to increase labor productivity

Consider implementing the use of <u>wearable mobile computers</u> such as wrist-mount or Bluetooth Ring Scanners. According to a <u>2016 VDC Research survey</u>, 85% of end users were motivated to purchase warehouse wearable devices to increase labor productivity. The most notable pressures that were the impetus of the decision to implement wearable mobile computers included the need to:

Decrease shipment errors

Achieve higher inventory accuracy rates

Boost mobile workforce productivity

Realize cost-effective track and trace

Ensure on time shipments





Pictured: Zebra Technologies Wearable Devices

刹 ZEBRA

REDUCE STEPS And Save Time

eliminate unnecessary steps in order picking

Consider picking directly to a shipping carton or from an intermediate bin to reduce steps and save time. In this pick-to-box method, the order picker does not move. Instead, the picking area is set up so that several picking stations are connected via a conveyor. Once the order picker fills the box with goods from his station, the carton moves to other picking stations until the order is complete.

enlist automation and different storage strategies:

Automate warehouse picking using robotic or semi-robotic technologies to enhance the work of human pickers. This may mean using a <u>cobot</u>, a collaborative robot that is intended to physically interact with human workers within a shared workspace or robots which operate autonomously or with minimal guidance from human workers. Both strategies have been gaining acceptance in warehouse and distribution center work environments.





automated warehouse picking using cobots:



For example, <u>6 River Systems</u> has developed Chuck, a mobile warehouse robot. Designed to help optimize human labor productivity, 6 River Systems developed a highly flexible line of collaborative robots which traverse the warehouse to expedite the picking rate by 2-3x. Using a directed workflow strategy, the robots act in pace with warehouse workers to aid them in moving quickly through each step of the picking process. Cloud-based software uses artificial intelligence to group similar orders, boosting efficiency. Workers can learn the process in minutes.

Pictured: 6 Rivers Systems: Chuck 36 RIVER SYSTEMS



consider Voiceenabled operations

INCREASE THE ACCURACY AND EFFICIENCY OF WAREHOUSE WORKERS

How does voice picking work? Already established to increase the accuracy and efficiency of warehouse workers, each order picker wears a headset and industrial microphone connected to a mobile device which is running the voice application. Order pickers are instructed by the voice on the device regarding the location, quantity and identification of each item to be picked. Upon completion, the order picker speaks into the microphone to confirm the work.

The voice picking software solution integrates with warehouse management or ERP software to receive information about the order, picking areas and other relevant facts. Data is organized and worker assignments are distributed to individual order pickers on the warehouse floor along with verbal instructions.

The use of a voice enabled system can enhance labor productivity and accuracy, help to ensure safety and lower the amount of training time needed for these operations. Pictured: Zebra Technologies Tablet

EXAMPLES OF THIS TECHNOLOGY INCLUDE:



Lucas Systems



Zebra Multi-Modal and Voice-Directed Picking ra Technologies Nearable Devic

light-enabled operations, such as pick-to-light and put-tolight are **easy to learn** and use.

Ideal for smaller, consistent daily orders, light-enabled systems require less floor space and can be used with high-speed sortation systems.







Pictured: Lightning Pick: Pick-to-Light System

mobile workstations and mobile carts boost worker productivity.

Position computer and printing solutions close to warehouse task locations and experience efficiency as well as labor productivity improvements. Use of powered mobile workstations can result in decreased overtime hours and labor costs per worker as well as increased picking rates, labeling accuracy and receiving volume. Mobile powered workstations also help to reduce the time and distance walked by workers, reducing fatigue.

HERE ARE TWO SUPPLIERS OF THIS TECHNOLOGY:







Pictured: New Castle Systems: PowerSwap Nucleus

enhance forklift driver productivity with **artificial intelligence**.

One of the latest technologies pairs forklift vision systems with artificial intelligence. Onetrack. AI incorporates computer vision and artificial intelligence to track, predict and interpret the actions of warehouse workers. The data is used

to enhance safety, throughput and operational accuracy. <u>Onetrack.Al</u> utilizes a multitude of data collection points to gather information then uses proprietary algorithms to calculate the productivity, level of skill and safety. Feedback is provided to enhance the efficiency of your forklift fleet.





The Danger of Workarounds: How Workarounds Are Costing Your Company Money

what is a workaround?

A workaround is an alternative process designed out of the need to overcome a roadblock immediately so that an operation can move forward. When conceived, little consideration tends to be given to the long-term consequences of workarounds, including diminished productivity, accuracy, lack of visibility, transparency and accountability and other factors. Over the past few years, software, especially warehouse management systems have changed dramatically. Today's fast-paced operations now often geared towards handling huge volumes of smaller, individual orders are out of sync with legacy WMS that were designed to handle goods by the pallet.

Many companies purchase enterprise software then expect their solutions to do things that they were never designed to do. Employees create workarounds, manual processes that work around an issue rather than fix it. Often, solutions were designed to carry out industry best practices for specific processes.



Workarounds, by their very nature, are inefficient, tend to generate errors and **WASTE TIME & LABOR.**

take our quiz on workarounds.

Are you:

- Using spreadsheets or paper for tasks that could be automated?
- Relying on manual data entry, which is prone to keystroke and handwriting errors, incorrect calculations or missed data?
- Still tied to paper-based processes?
- Unable to trust information from software?
- Unable to ensure compliance tracking?
- Struggling to maintain legacy or proprietary software that is outdated, outgrown or which cannot be upgraded?
- Worried about increased vulnerability to data breaches?
- Using workarounds as "temporary" fixes to a specific issue or problem?
- Using workarounds that were created out of necessity to use outdated technology currently in place?
- Relying on workarounds in your business due to workers' fear of change?
- Frustrated with the time and labor it takes to manage the workarounds?

if you answered **"yes"** to one or more of these questions, workarounds could be increasing operating costs in your warehouse.

here is a common 3PL billing **workaround dilemma**

Many third party logistics providers are using warehouse management systems that either were not initially designed for the third party model or which lack the capability to handle true 3PL customer billing needs. With the expansion of businesses outsourcing work, many 3PLs are performing a wide array of value-added services but find that their WMS is unable to bill for all the services their company provides.

From notes scribbled on Post-it notes to clipboards with notepads and Excel spreadsheets, these 3PLs are making a valiant effort to capture the information needed to properly bill their customers for the contracted value-added services.

GUESS WHAT? This haphazard process is error prone, inefficient, frustrating and ineffective. 3PL billing workarounds are notoriously costly to 3PL operators and they end up "leaving money on the table". Typically, once a 3PL implements a WMS that can accurately handle activity-based billing, the result is dramatic capture of revenue-generating billing, and some shocked customers from all the underbilling they had previously experienced!

getting rid of workarounds

Does your warehouse have documented SOPs? Inefficiencies often occur when companies fail to thoroughly document and train workers on the required steps of each warehouse process. Although monitoring error rates can help identify problems, they should be viewed as indicators of systematic failures. Logging changes in standard operations procedures, your WMS, workforce or other areas can provide valuable clues as to how to resolve these issues. Documenting operational processes should be used to reinforce accountability. Warehouse workers should not be permitted to circumvent the system or to create workarounds but rather should be encouraged to take ownership and accountability for performance.





contract manufacturers, contract packagers and co-packers

If they are not using cutting edge technology, is it costing your business money?

Are you using a copacker, contract packager or contract manufacturer? As more and more services are outsourced, third party vendors need to invest in cutting edge technologies to keep pace and provide a high level of accurate, timely information to their clients. Smaller co-packers and third party vendors often do not see the need to invest in technology, preferring instead to tell their clients that they can "keeps costs down" through careful management of manual operations. If this is the case for your company, how do you know if the lack of technology is having a negative impact on your business?

Think of your inventory as a pile of cash sitting on a forklift. Inefficient operations, lack of visibility to make critical decisions and other factors mean that your profits are flying out the window. The inability to account for every piece of your inventory probably means you are losing money, either due to waste, inefficiency, error, damage or some other factor.

HERE ARE SOME ISSUES TO CONSIDER. Ask yourself these questions:

- What kind of technology is the third party vendor using to handle your business? Are they using barcodes or RFID with mobile computers and inventory management software or a WMS? If not, why not?
- 2. When was the last time the vendor upgraded or invested in new technology to benefit your business?
- 3. Have you experienced losses from lost, misplaced or aged inventory?
- 4. When you ask questions, can you always get the answers you need quickly or is information not readily available or inaccurate?
- 5. Does the vendor provide you with reports and dashboards to help you make informed decisions?
- 6. Do you have the level of real time data and operational visibility needed for your business?
- 7. Do you have access to a web portal where you can view information on inventory, processes, billing, etc?
- 8. Can you make changes yourself or do you need help from customer service representatives?
- 9. Are you confident that all regulations are being followed, quality inspections carried out, etc.? Where is the documentation and how you can you access it?
- 10. Do you have immediate access to information on raw materials and supplies, production, etc. whenever you need it? Are you confident that the vendor has everything needed to manufacture your product on schedule as needed?

are manual operations and paper-based processes costing your business money?

A few years ago, a large-scale private label beverage manufacturer with numerous enterprise clients relied on co-packers to produce much of its private label beverage stock. This manufacturer produced thousands of SKUs. Every week, the beverage manufacturer would undertake the arduous task of compiling a list of aged inventory for all SKUs that were 90 days from expiration date. The information was used to determine the disposition of aged inventory-either to donate, to discount or to dispose of appropriately. Having real time, accurate visibility of the aged inventory by location and expiration date was critical.

The supply chain manager to whom this task had been assigned found it frustrating, mainly because most of the co-packers at that time did not use computerized systems to track, manage and report on inventory. Each co-packer was responsible for submitting the information on time and accurately, however their lack of standardized processes and an inventory or warehouse management system made this effort problematic.

Hours before finalizing the final report on one particular quarter's activity, the supply chain manager received a message from a co-packer with a request to alter the totals that had previously been submitted. The manager of the contract manufacturing company had found stacks of aged inventory piled into a corner of a large section of a crowded storage area. It was a relatively common occurrence for a co-packer to uncover unforeseen aging product in a warehouse which was managed manually. In this particular instance, the problem was that it was a large quantity of product, all only a few days from expiry.

The report was startling. The private label beverage manufacturer reported a loss of approximately \$250,000 in that quarter alone due to unforeseen aged inventory. Aged inventory at co-packer facilities proved to be a more significant problem than first understood.

The lack of accurate aged inventory visibility was costly and embarrassing for the supply chain team of the private label beverage manufacturer. This prompted creation of an action plan and an initiative to study the problem in greater depth and facilitated an effort to work with the co-packers more closely on operations.

Does the software you are currently using fit your business as it is right now? Is it designed to be easily customized without costly, time consuming changes to source code? Do the customizations carry through upgrades?

Making sure that the software your warehouse operation uses fits your specific business and industry requirements is essential. While it may seem cheaper to continue to use an outdated system or to make a minimal investment in newer technology, if the system will soon be outdated or lacks key functionality, you may be quickly overtaken by your competition, lose customers and face challenges that cannot be solved. Selecting software based on your current and anticipated needs that can readily be customized without costly changes to source code will pay off in the long run and provide your company with the agility needed in today's fast-paced world.

measuring metrics matters

If your company is not measuring and monitoring key performance indicators of your warehouse operation, you are missing out on vital information that can be used to improve performance and profitability.

Taking digital data and using it to produce reports and dashboards will enable your management team to have a clear, concise picture of your warehouse operations. Measuring warehouse key performance indicators (KPIs) over time helps identify areas in need of improvement.

HERE ARE SOME OF THE MOST COMMONLY MEASURED WAREHOUSE KEY PERFORMANCE INDICATORS:



Today, many warehouse operators post dashboards in their facilities as scorecards to showcase performance. The information is often provided for training and coaching purposes and can act as the impetus for discussions with the workforce to gain insight, feedback and ideas for improved performance. Many warehouses monitor KPIs to develop incentives plans to **boost workforce productivity, reduce errors** and encourage other improvements and achievements.



IF YOUR BUSINESS IS NOT USING DASHBOARDS TO SHOWCASE THE PERFORMANCE OF YOUR WAREHOUSE WORKFORCE, WHY NOT?

save on supplies & utilities

Here are some vendors to help you lower the cost of your supplies, small package shipping and utilities



Nitco- Lithium-ion power cell batteries used to power electric forklifts, robots and other warehouse equipment and machinery have impressive battery lives that can last up to 10 years. Investing in better batteries can result in significant savings.



Zebra Certified Supplies provide consistent quality, optimized performance and peace of mind.



Schooley Mitchell-The largest independent cost reduction consulting firm in North America, Schooley Mitchell facilitates savings on telecom, merchant services, waste disposal and small package shipping and courier services on your company's behalf. Bills are monitored to make sure that your company does not overpay for services. Schooley Mitchell reports saving an average of **27-28%** on essential business service expenses for their clients.

07 protect your IT infrastructure

// This was quite massy with SPECIAL and commented parts. // Supposedly hacks to make the latest adition work. // It might net work properly. ft/cpisode < 11 upisode = 1;

if (gameroode == retail)

f (episode > 4) episode = 4;

else if l'gamemode == shareware

episode = 1 // only start episode 1 in shareware

prevent downtime caused by cyberattacks

Mitigating cybersecurity risk is paramount in today's economy. According to the <u>2019 Verizon</u> <u>Data Breach Investigations Report</u>, 73% of data breaches are perpetrated by outside actors, 50% by organized criminal groups. While the time it takes to compromise a system and successfully create a data breach is very short, it may take weeks or months for businesses to discover that they were hacked. The damage done to your database, customer relationships and reputations could be costly beyond measure.

The U.S. National Institute of Standards and Technology's (NIST) Cyber Supply Chain Risk Management (C-SCRM) program reported this year that <u>cyberattacks are happening as</u> <u>frequently</u> as in past years but are having a greater impact because there are more technology connections.

here are some of the primary purposes for launching cyberattacks:

- Industrial espionage and information gathering
- Using infrastructure to access computing resources or online storage
- Using infrastructure to access and attack third parties
- Access infrastructure and systems in order to hold systems or information hostage for financial gain (ransomware, malware, etc.)

Loss of customer data, ability to provide contracted services, etc. can be financially devastating to a business. Even if a lawsuit does not occur, it is likely that customers will lose confidence, no longer trust your organization and look to replace your business with one that does offer cybersecurity protection.

副清清

IIIE

DTQK

abon Jng

100, 101, 101, 101, 1010 110,00,100,00

> Another huge cost to a business is operational downtime. If your business is attacked, you may be locked out or at the least, have diminished access to information or systems, preventing full functionality. If your company has downgraded security to connect with clients or partners rather than collaborating with them to upgrade infrastructure, you are putting your business and its profitability at risk. One example of this is companies which still rely on FTP instead of the more secure option, SFTP which encrypts data and user credentials. Credentials may be shared with a third party, the same password may be used for multiple accounts or other risky behavior may make it easy for a hacker to login, smoothing the way for a dangerous criminal to cause damage.

secure your business with business continuity, disaster recovery and cybersecurity services.

On average, small businesses invest less than \$500 in cybersecurity. Over the past year alone, <u>malicious email messages have increased 25%</u>. Employees are often either not knowledgeable or are complacent about <u>cybersecurity</u>. Hire a cybersecurity consultant to conduct periodic cyber audits and training. A small investment in cybersecurity training, process improvements and monitoring can provide peace of mind and prevent paying more for disaster recovery services after a cyberattack.

Uptime is essential. Contact your WMS provider or a cybersecurity firm for help in ensuring business continuity. Ensure that backups are a part of your team's daily routine. Making sure you can keep your business up and running is a wise investment in your company's continued profitability.

DID YOU KNOW THAT OVER HALF OF ALL CYBERATTACKS TARGETED SMALL **BUSINESSES**?

80

is your warehouse ready for the transition to supply chain 4.0, the digital supply chain?



As the world transitions to a <u>digital supply chain</u>, companies are shedding their manual, paperbased processes and inefficiencies and embracing new ways of sharing and using data. Over the past thirty years or so, the supply chain logistics industry has been in the throes of change. Moving goods across the world from supply chain partner to partner and across borders with differing regulations, valuable lessons have been learned. The operational logistics involved is often complex and communications incomplete and inaccurate.

Emerging technologies and more widespread, affordable access to the Internet are helping to fuel the transition to digital supply chain models. **Moving to a digital supply chain will help fuel economic growth worldwide**, especially in rural areas and is likely to shift wealth into underserved regions. The faster pace of operations needed for dealing with changing requirements necessitates that supply chains become more efficient, faster, as well as more detailed and precise.

By bringing together and enabling the sharing of data electronically between supply chain partners, forecasting, planning and execution of activities can be executed rapidly, enabling greater flexibility of operations. Supply Chain as a Service (SCaaS), a new business model that enables supply chain planning activities or transportation management has been initiated. SCaaS ensures that supply chain can be purchased on a by-usage basis service rather than investing in in-house capabilities and resources. Employing a digital supply chain model can help reduce costs, expedite services including transportation and delivery, provide enhanced end-toend supply chain visibility and collaboration and improve overall supply chain efficiency. Leveraging data such as IoT information from multiple sources in warehouse and supply chain operations helps provide vital insight that can be used to structure process improvements and facilitate new synergies.

To move to digital operations, warehouses will need to shed paper and manual-based operations. Using automated data collection methods including <u>barcode scanners and readers</u> and <u>mobile handheld</u> <u>computers</u> along with a <u>warehouse management system</u> will produce noticeable time and cost savings for your business.

IN AND OF ITSELF, PAPERLESS WAREHOUSING HAS DISTINCT COST SAVING ADVANTAGES INCLUDING:



09

Conclusion

As you can see, there are a myriad of ways to use technology to streamline operations, ratchet up productivity so that costs can be pared down from warehouse operations. No matter how and where your business starts, investing in the type of technologies that can improve your warehouse operation can provide measurable improvements.

QUICK LINKS TO COMPANIES MENTIONED IN THIS GUIDE



DEFINITIVE TECHNOLOGY GROUP

Definitive Technology Group was built on the goal to provide the highest quality products and services at a fair price, striving to be #1 in the world in workflow optimization within medical, retail, fulfillment and distribution centers. Definitive Technology Group improves workflow across material handling, medical and retail industries through providing a top-of-the-line Uninterruptible Battery System and mobile workstation carts that have become widely known as "Efficiency Leaders."

NEWCASTLE SYSTEMS





PINC

PINC is the number-one provider of yard management systems, finished vehicles logistics solutions, and inventory robotics to the world's leading brands. PINC provides scalable software, hardware, and services that enable companies to move inventory throughout the supply chain faster, cost-effectively, consistently, and more efficiently. Let the leading inventory robotics and yard management company help you optimize your operations and boost your bottom line.

EYESEE

Eyesee is a drone solution designed to automate inventory-taking and inventory control in warehouses. Hardis Group and its experts designed a complete solution comprising an autonomous drone, a tablet app to manage the drone and a package of numerous Cloud applications. These apps allow you to manage mapping, data processing and reporting. Eyesee is compatible with all WMS and ERP and is able to read all bare-code types. Our expertise in terms of supply chain solution, artificial intelligence, data processing and indoor geo-localization assures you a liable and effective solution.



eyesee

VTRUS

Just as the clear vitreous gel transports light and gives structure to our eyes, at Vtrus, we are engineering the visible and invisible aspects of perception that will shape the future of spatially-aware, socially engaged, human-friendly devices.

MONNIT

Monnit Corporation was established to capitalize on the emerging trend of connecting to, monitoring and controlling machines and other "things" in our environment. Our backgrounds in technology creation, manufacturing, marketing and sales provide us with the talents and skills needed to establish the foundation to be the lowcost wireless sensor partner of choice.

SLUCAS

LUCAS SYSTEMS

Lucas Systems provides solutions for intelligent mobile work execution that improve hands-on processes and workflows in warehouses and distribution centers. We help employees, supervisors and executives to work smarter.

LIGHTNING PICK



Lightning Pick is a leading provider of light-directed and advanced technology order fulfillment systems. For 35 years, we have provided innovative automated fulfillment systems and material handling technologies to world-class companies across a broad range of industries — setting new standards for productivity, accuracy and customer satisfaction. Our systems have been tested and proven in more than 500 facilities around the world.



6 RIVER SYSTEMS

Today's buying habits have changed the world of fulfillment forever. Customers demand better service but operators are stuck fighting today's problems with yesterday's tools. 6 River Systems knows that fulfillment is key to customer satisfaction. Starting with Chuck, a collaborative mobile robot, 6 River Systems is building fulfillment solutions that power the winning warehouses of tomorrow.



VOODOO ROBOTICS

Voodoo Robotics, the leading innovator in picking warehouse automation, provides cost-effective technology for warehouse inventory management and order fulfillment solutions. With engineering and robotic expertise, the Texas-based pioneer brings the next wave of state-of-the-art automation to material handling industries.



RICE LAKE WEIGHING SYSTEMS

Rice Lake Weighing Systems is a family-owned, ISO 9001 certified corporation, and has been manufacturing and distributing weight-related products and supplies since 1946. Within the company, progressive new technologies merge with the wisdom of industry experience to create the future of weighing through cutting-edge research and design. Rice Lake's roots are planted firmly in the principles of quality and customer service. Through three generations of family ownership, these ideals remain unchanged. Today, Rice Lake Weighing Systems is a global leader in measurement and automated process control. Rice Lake offers more than 40,000 products, with over one million items in stock and available for same- or next-day shipping. The company continues to lead the industry in technological advances and quality products, all with legendary customer service. Rice Lake iDimension® Series captures an image of packages, flats, poly bags, tubes and irregular shaped items in record time to calculate the dimensions of your packages for shipment.



ONETRACK. AI

ONTRACK.AI provides flexible, scalable, affordable solutions for warehouse operators that need to optimize the work from their existing forklift drivers today. Our connected hardware is powered by sophisticated AI software that learns to assist your drivers in real time on the ground, enabling everyone in the warehouse to work as efficiently, accurately, and safely as a robot.


SCHOOLEY MITCHELL

NITCO

Our warehouse solutions team can show you how to increase productivity and storage capacity without expanding your existing footprint. From redesigned rack systems and interior mezzanines to cutting-edge CAD technology used for 3D warehouse modeling, NITCO has the products and services, industry partners and experience to help you reimagine your warehouse. Since 1969, Nitco has been providing material handling and industrial solutions and now provides advanced solutions to the warehouse and distribution industry including robotics.

SCHOOLEY MITCHELL

Schooley Mitchell is the largest independent cost reduction consulting firm in North America, with offices from coastto-coast in the United States and Canada. On average, we reduce essential business service expenses by 27-28% and have delivered over \$340 million in documented savings to our clients to date. Schooley Mitchell offers independent and objective recommendations based solely on the client's best interests. Consultants receive no kickbacks, residuals or incentives from providers. The services are risk-free – clients incur no out-of-pocket expenses and Schooley Mitchell's fees are self-funded out of the savings generated. Any business that uses telephones, wireless devices, computers, processes debit or credit cards, generates waste, or uses shipping and courier services can benefit from Schooley Mitchell's expertise.



- https://www.bloomberg.com/news/articles/2019-08-07/tariff-fears-caused-a-u-s-import-surgenow-warehouses-are-full
- · https://digiday.com/retail/target-e-commerce-sales-growth-higher-logistics-costs/
- https://www.scmr.com/article/the_perfect_warehousing_storm
- https://www.warehousingandfulfillment.com/warehousingandfulfillment-news/warehousingand-fulfillment-fees-rise-according-to-latest-insightquote-survey/
- https://www.supplychaindive.com/news/reskilling-workforce-labor-age-automation/554744/
- https://business.dailypay.com/blog/high-turnover-rates-by-industry
- https://www.joc.com/international-logistics/industrial-real-estate/warehouse-vacancy-lowdespite-%E2%80%98unprecedented%E2%80%99-construction_20190619.html
- https://avisonyoung.uberflip.com/i/1113394-ayspring19globalindustrialreportmay8-19final/0?
- https://www.sdcexec.com/warehousing/article/12341094/technology-drives-the-modern-3pl
- http://nearfieldcommunication.org/
- https://www.zebra.com/us/en/products/location-technologies/bluetooth-beacons.html
- https://www.efulfillmentservice.com/2012/11/how-to-calculate-dimensional-weight/
- https://www.ricelake.com/en-us/products/dimensioning
- https://www.zebra.com/us/en/solutions/transportation-logistics-solutions/warehouse.html
- https://www.mmh.com/article/the_state_of_internet_of_things_iot_in_the_warehouse
- https://www.monnit.com/solutions/warehouse-monitoring
- https://www.zebra.com/us/en/products/mobile-computers/wearable-computers.html
- https://www.zebra.com/content/dam/zebra_new_ia/en-us/solutions-verticals/product/Mobile_ Computers/Wearable%20Computers/GENERAL%20(asset%20at%20level)/documents/vdcresearch-replacing-complexity-with-productivity.pdf
- https://www.forbes.com/sites/bernardmarr/2018/08/29/the-future-of-work-are-you-ready-forsmart-cobots/#24835a5d522b
- https://6river.com/what-is-automated-warehouse-picking/
- https://enterprise.verizon.com/resources/reports/DBIR_2018_Report.pdf
- https://www.supplychaindive.com/news/supply-chains-tech-savvy-cybersecurity/552769/
- https://www.zdnet.com/article/these-are-the-most-common-types-of-phishing-emails-reachingyour-inbox/
- https://www.itgovernanceusa.com/blog/six-most-common-cyber-attacks
- https://www.mckinsey.com/business-functions/operations/our-insights/supply-chain-40--thenext-generation-digital-supply-chain
- https://www.zebra.com/us/en/products/scanners.html
- https://www.zebra.com/us/en/products/mobile-computers/handheld.html



EQUIP YOUR WAREHOUSE WITH THE LEADING ENTERPRISE ANDROID™ WAREHOUSE DEVICES

Zebra offers a comprehensive, industry-leading warehouse portfolio, providing all the hardware, software and services needed to successfully modernize your warehouse operations.

CHOOSE FROM THE WIDEST ARRAY OF ZEBRA **RUGGED** ANDROID WAREHOUSE DEVICES



Handheld Computers



Wearable Computers



Vehicle Mount Computers



Tablets

Kim Ganoe kganoe@datexcorp.com 727 400 3628

Datex drives the intelligence. Zebra puts it in the right hands.

Sdatex

HOW CAN DATEX HELP YOU REDUCE WAREHOUSING COSTS?

EXAMINE

warehouse operating processes and identify areas that can be improved, optimized or altered to create savings

EVALUATE

and suggest technologies for use in your operation based on the type of inventory, regulations and other factors

CONNECT

you with other supply chain experts and solution providers

About Datex

- In business for over **41 years**
- Specialists in white glove service, with dedicated, seasoned account management team
- Technology solution provider to 3PL, distribution, fulfillment, food and beverage, pharmaceutical, manufacturing and other industries
- Datex employees provide all support, software development, implementation, project management and sales services-not third parties
- Award-winning developer of Microsoft-based warehouse management software
- Successful hardware technology solution provider and longstanding partner of Zebra, Honeywell and CipherLab

CONTACT US TODAY FOR HELP REDUCING YOUR WAREHOUSING COSTS







www.datexcorp.com | marketing@datexcorp.com | (727) 571-4159